

CONTACT PRINTING LAMP FOR PHOTOMECHANICAL WORK

Three of the requirements that contact printing lamps for photomechanical work must fulfill are: (1) the illumination must be uniform over the printing plane; (2) the light source must be small in size; and (3) the lamp-house must accommodate filters. These requirements are met with a modification of the KODAK Adjustable Safelight Lamp. This modification is pictured at the right, with call-out numbers corresponding to numbered descriptions with the text.*

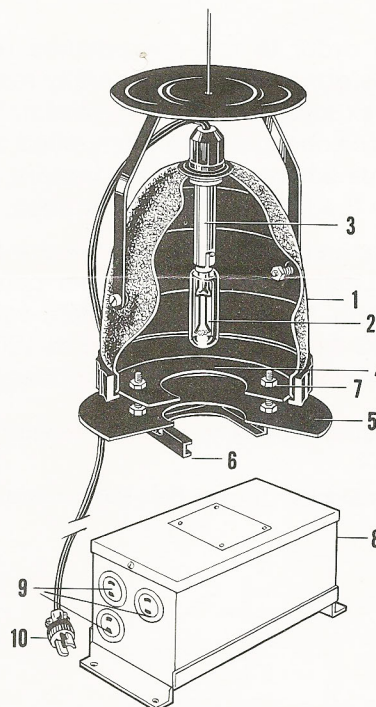
Using a KODAK Adjustable Safelight Lamp ①

When modified, this lamp will provide a light source of excellent uniformity and high intensity. The bulb to use for the modification is a General Electric 100 T8/1SC-20V ②; it has a small filament and clear-glass end, and *MUST* be burned base-end up. This bulb can be ordered from the General Electric Company or from one of its branches through your dealer for Kodak graphic arts materials.

Because the bulb has a bayonet-type base, an adapter of the type used for miniature photographic flash lamps is necessary. Use of an adapter that is 3 1/2 inches long places the bulb near the aperture plate and creates a cone of light broad enough to easily cover an average-sized printing frame. An adapter matching this description is manufactured by Frank W. Morse Company, 44 Lincoln, Saco, Maine 04072. Order it through your photo dealer using the designation "No. 455—Photoflash Lamp Socket Adapter." ③

The safelight filter is replaced by a metal disk 5 1/2 inches in diameter ④, which has a 2 5/8-inch round hole cut in the center. Below this metal plate is a second disk of metal with an outside diameter of 7 1/2 inches ⑤ and a 2 5/8-inch hole in the center. On the underside of this hole is soldered a KODAK Gelatin Filter Frame Holder, Series VIII ⑥. The lower disk is spaced 1/2 inch below the upper disk by means of three 3/4-inch machine screws ⑦. Extra nuts on each screw will hold the plates at the desired separation. This space allows excess heat to escape and keeps the gelatin filter cooler. The entire disk assembly and the inside of the lamp should be painted with KODAK Brushing Lacquer, No. 4 Dull Black.

The transformer ⑧ is a 100-watt, step-down type with a 115-volt primary and a 5-ampere tapped secondary having taps for 4, 8, 12, 16, 20, and 24 volts. An example is the Edwards Signalling Transformer, manufactured by the Edwards Company, Inc., Clock & Program Systems, 90 Connecticut Avenue, Norwalk, Connecticut 06852. This transformer, or one similar to it, is generally available through electrical supply stores. Only three of the taps are used—8, 16, and 20 volts. Each is connected to a separate female receptacle ⑨ installed in the end of the transformer case. (Use "midget twist-lock, female, flush motor base" receptacles, obtainable from electrical supply dealers. These fittings are used to prevent the accidental insertion of the lamp cord into a 110-volt service outlet.) A corresponding midget twist-lock cord plug ("cap") ⑩ is attached to the lamp cord, replacing the standard cord plug. This plug can then be inserted in any one of the outlets to obtain different light intensities.



*A ready-made lamp similar to this is the K&M Tri-Level Point Source Light, made by the K&M Manufacturing Company, 4931 73rd Avenue North, Pinellas Park, Florida 33565.

In order to make exposures repeatable, we recommend the addition of a constant voltage transformer. It is not generally realized that a drop in line voltage of only 10 percent will decrease the exposure of an orthochromatic material by almost 40 percent because the color of the light source changes with the applied voltage. This problem is especially troublesome in many printing plants where large press motors, exposing lamps, and other heavy power equipment constantly vary the load on the power lines.

Manually variable controls are available, but a much more satisfactory arrangement is to use a constant-voltage transformer between the line and the step-down transformer described above. Among the suitable constant-voltage transformers are the Raytheon VR-6113† and the Sola 20-13-112‡. Both are rated at 120 watts and will handle fluctuations over the range of 95 to 130 volts while holding the secondary voltage to within 1 percent.

†Raytheon Company, Sorenson Product Supplies Department, 676 Island Pond Road, Manchester, New Hampshire 03103.

‡Sola Electric Division, Sola Basic Industries, 1701 Busse Road, Elk Grove Village, Illinois 60007.

Graphics Markets Division 
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